AMERICAN VETERINARY REVIEW,

DECEMBER, 1892.

EDITORIAL.

TO OUR SUBSCRIBERS.—And not alone to our subscribers, but to our American brethren in general, we feel in duty bound to address this notice. With three numbers more, the sixteenth volume of the REVIEW will be completed. With a retrospect of sixteen years of regularity and punctuality in its monthly appearance, with a testimony of its interest and value, as manifested by numerous letters of approval in our hands; with a large amount of what, without boasting, we may claim to have been good work, or how could it have survived so long? With all this, the question is importunely pressing itself upon us, and must also be referred to the members of the profession at large, "Is it worth while to begin the seventeenth volume, or is not this a good point at which to stop?"

Established under the patronage of the United States Veterinary Medical Association, the REVIEW has labored hard in behalf of the profession, of the schools, of the societies, of the individual practitioner, and has been always ready and ever ambitious to raise high the flag of our profession, and to sound the bugle to the good tune of "Excelsior." It has thus fought the fight of progress and advancement. Without reference to considerations of selfish interest or reasonable prospect of financial success, and yet, after so many years of laborious effort, and it may also be said of successful and useful existence, the questions we are propounding must be answered and answered *at once*.

The business management of the REVIEW reports an enormous deficit in its returns. Subscriptions are due which have stood for years, and they have accumulated to such an amount that it has become a question of ridiculous self-sacrifice to continue. In plain words, the situation resolves itself into this query: Shall the veterinarians of the United States continue to receive, read, profit by, and enjoy their REVIEW *gratis*, or will they honestly pay for what they are glad to get? If among the 3,000 veterinary surgeons in the United States there are enough to support a regular organ of their profession, now is the time for them to say so.

Will gentleman who are in arrears (which now aggregate the respectable amount of $3,000) kindly send their dues to the publishers?

Ignoring this call will mean the suspension of our publication.

THE NATIONAL VETERINARY COLLEGE.—The announcement of the establishment of this organization, contained in our last issue, seems to have elicited a feeling anything but approbatory of the undertaking, or friendly to the gentlemen connected with it. We have shown by the publication of the resolutions of the Philadelphia Veterinary Society in the same issue, our willingness to open our columns to the profession for the free discussion of this subject, and this must have been understood as we intended it to be if we truly comprehend the intent of two letters sent to us for publication by Dr. A. E. Conrow, Secretary of the Philadelphia Veterinary Society, and which will be found below. We hope that other expressions of opinions may follow, for the subject is one of no little importance, and the free comments of influential veterinarians may powerfully influence the course of the new management. We reserve for ourselves the right to consider it at a later day. The text of the letters already received is as follows:

IOWA STATE BOARD OF HEALTH.

AMES, IOWA, October 7th, 1892.

A. E. Conrow, M. D.

DEAR SIR:—A copy of the resolutions adopted by the Philadelphia Veterinary Society has been received at my office. I have also received the announcement of the Washington Veterinary School.

Your Society could not have experienced more surprise and disappointment on the receipt of that document than I did. I feel that the veterinary profession of this country, and especially those who have given many of the best years of their lives in an honest endeavor to elevate the cause, had a right to expect other and better things from that source. I was of the opinion we had just reached a point in the history of veterinary matters in the United States when all the better influences would be exerted in the direction of more thorough courses of study, and when the lecture fee would cease to constitute the "long felt want" that impels to the organization of a new college. I had hoped that with the recent move of the United States Veterinary Medical Association in asking for higher qualifications for membership would follow a change in the curriculum of every veterinary school in this country advertising a two years' course, and yet laying claim to a respectable fellowship among veterinary colleges. But it never occurred to me to entertain a fear that those in high official positions, those whose station best fits them for giving force and effect to this movement, should be the first to aid in balking it.

I am in thorough accord with your Association in its unqualified protest against any system which recognizes twelve months' college work as adequate to secure a college degree.

I am yours very truly,

M. STALKER.

WHITE PLAINS, N. Y., October 9th, 1892.

Dr. A. E. Conrow, Morristown, N. J., Secretary of Pennsylvania Veterinary Society.

DEAR DOCTOR:—I have just received a copy of resolutions regarding a veterinary school to be established at Washington, D. C., by members of Bureau of Animal Industry. I have written for a prospectus which I hope to obtain soon.

The affair is one of deep interest. The vital points to me are: Not whether a set of men shall establish a two, three, four or five year school, but whether public business can or will be successfully and honestly prosecuted by men who have private interests in the same line at stake; also whether it is fair to other private colleges for the Government to permit men in its employ to use its patronage for their private school in even an implied way.

We will not question the motives of the founders other than to admit that they wish to increase their income by transacting private business. This is done by a large number of Government employees without a question being raised as to its legality or propriety; we can but admit that, aside from the school term graduation clause, that the prominence of the men proposing the school borrows some of its force from the position they hold. There is another deeper objection; after a year, after two years, and as the years go by, such a school will have an alumni of two year men. These men will compete with graduates of three year colleges for positions at the disposal of the Department of Agriculture and the Bureau of Animal Industry; now it is but natural that members of the Bureau having come into contact with the students of their college would desire to place them advantageously. This would not necessarily interfere with the relative quota furnished by different States, but if taken ad-

vantage of would interfere with the rights of other graduates from other colleges equally good if not better.

It may be claimed that their men knowing the wants of the Bureau could train their men better for special work. I should say that this would be further infringement of private rights, it would also tend to narrowness of views in graduates of the proposed college and a deterioration of the profession. That the professors of a veterinary school, not a government school, should have such an immense patronage derived from the Government as officers of the most powerful Bureau of the Agricultural Department is of itself an inducement to students to attend. Add to this a short course when other schools are preparing to raise their standard, and there is attained the combination of short time graduation with the strongest possibility of an appointment in government service accompanying the diploma.

The mere fact that such things might be is, in my opinion, to effect: that not only should the men designing such a step look very carefully into its results and the appearance it may present to those of the profession on the outside, but the Secretary of Agriculture also should investigate the apparently harmless move which gains strength from the fact that men of high standing in the Bureau are its promulgators inevitably linking the fair name of the Department with their destinies whether the business be conducted fairly or not.

That the veterinary profession should take every interest in either promoting the enterprise as an additional educational institution for the welfare of the profession, or in opposing it as being founded against the best interests of the people and the profession follows without saying.

It must be remembered, sir, that I write this without reference to the integrity of any of the promoters of the scheme proposed, for among the Bureau are men whom I esteem my best of friends. It is simply as an institution that I write of it, judging that its originators merely misjudged the effect that the creation of a new veterinary school under their auspices would produce upon the public.

Is there not something behind all this which is suggestive? Unless we wish to ascribe the motives of the proposed faculty as benevolent we must believe them mercenary. It is true that many government employees living in Washington feel the stress of the normal living expenses upon their salaries, and to prepare for the rainy day embark into one or another enterprise to add to their income.

It is also true that members of the Bureau are paid comparatively low as compared with other departments of service, and as compared with professional men of equal attainments in other walks of civil life. It is, moreover, true that various colleges of Washington draw upon the various branches of the government for many of their professors.

Have not the promoters of this enterprise plenty of precedence for their action, and an added stimulus in the fact of insufficient salaries?

Is not the remedy for the Department of Agriculture in employing its men to pay them amply for professional services, and exact of them that they shall expend their strength and energies in the work, and above all not engage in enterprises which may involve the good name and the patronage of the Department.

Further, is not the desirability of a government school of an advanced type suggested in this movement? A school for graduates of other colleges; a school framed by professors separate from the employees of the Bureau, but which may use the employees at stated intervals in clinical work; and take advantage of the exceptional facilities for advanced work to be found at Washington.

While sympathizing with your Society in the belief that our profession is injured by the establishment at this time of a two-year college, you will know from the above why I do not endorse your resolutions except in the last proposition that it seems "contrary to the institution of the government to make use of one of its bureaus to establish and maintain a private school."

It seems to me that the reasons of protest should have been brought out more fully in this line as the Secretary of Agriculture should care very little whether the school be a one or a four-year school, but whether he had any right to interfere with private persons (as the members of the Bureau are outside of office) setting up any business they pleased.

If the movement against it is to meet with any success it must be on the plea that the school, because of its officers being in the pay of the government, implicates and involves the government in some way. If this can be established, *i. e.*, if it can be shown that a private enterprise gains prestige and patronage from the government with the consent of those interested only, you will soon see the head of the Department involved set the necessary machinery in motion to rectify the evil complained of. Believe me, sir,

Very truly yours,

COOPER CURTICE.

MORAVIA, New York.

NATIONAL AND INTERNATIONAL MEAT INSPECTION.

BY DR. W. L. WILLIAMS, Chairman of the Committee on Diseases.
(A Paper read before the United States Veterinary Medical Association.)

Sanitary Science, in its entirety, is one of the broadest, noblest and most ancient of all sciences. From the earliest ages much of the noblest thought, the deepest study, the most sympathetic and earnest endeavors have been designed either directly or indirectly to guard or improve the health of man.

The engineer who effectually drains a malaria-breeding swamp, the architect who constructs a house with due regard to light and air, and free from disease-breeding drains or refuse receptacles, the trained agriculturalist or horticulturalist who detects and destroys unhealthy vegetable food, the veterinarian who controls or extirpates disease of animals, which, by

contact or through the use of the meat or milk, are fraught with danger to the health or life of man, the physician who applies scientific measures to control or extirpate disease in man, and the great masses in close connection with these and many other human labors, all work upon a common ground, for a common purpose—human health and life—striving to vouchsafe to man his biblical three-score and ten years with a healthful body and mind.

It is sometimes asserted that this or that profession is the most important of all, but each is vital, and it is as difficult to measure or compare their value as it is to fix a price on human health or life.

Our ever changing social, political and geographical environments lead us to view with equally inconstant eyes the role of each of the useful sciences in relation to mankind. The one which proves most attractive, under certain conditions, commands generally the greatest number of and most zealous workers, while equally vital subjects are progressing but slowly or lying wholly dormant, until the favored branches have been enthusiastically advanced to a point far beyond that attained by the other corelative sciences, until the harmony of the whole is destroyed and the aims of the more advanced sciences are hampered or their progress impeded by the tardiness or deficiency of such branches as may from one cause or another have been suffered to fall far behind. At such times it becomes necessary to find sufficient, earnest and competent workers to revive and advance the lagging member and bring it into line with other useful sciences.

During the whole period of human history probably no other vital science has been allowed to drop so far behind its associates nor suffer so seriously from a long and baneful dormancy as the inspection and control of the flesh and milk of animals intended for human food, until at last the urgent necessity of the situation has forced itself upon the attention of the civilized world, and the demand has gone forth for zealous and efficient workers in the much neglected field, in so effective a manner that already much worthy and highly honorable labor is being done by a rapidly increasing band

of earnest investigators, until we now have abundant promise that meat and milk inspection will soon occupy a highly honorable place in the front rank of the sciences holding a vital relation to human life, health and happiness.

Meat inspection is almost as old as human history and has been fundamentally influenced by religious, social, political and commercial usages. The early Jews enacted meat inspection laws upon an unusually high sanitary plane and enforced them under the sanction of religion and with all the rigidity and zeal of a sacred religious rite. The Jewish meat inspection ordinances apparently rest upon the Mosaic law, and now, centuries after the tables of stone have vanished from the sight of man, these meat inspection laws still seem as indelibly stamped on the mind of the orthodox Jew as they were dur ing the days of Moses, and the civilized world looks with reverence upon the ancient customs, and heartily wishes that essentially the same laws could be adopted universally and administered as faithfully and effectually as they were thirty centuries ago.

The necessity for meat inspection is so apparent and well known to intelligent people that your committee scarcely feel warranted in dwelling, even briefly, upon this phase of the question. Recent study in connection with the so-called contagious and infectious diseases have demonstrated apparently beyond all chance of doubt that they are each due solely to special living organisms. The contagious diseases of man and animals are, in many cases, identical and intercommunicable, either by contact or by ingestion of parts of the deceased body by the healthy animal, and it is now a well recognized fact, unqualifiedly endorsed by all who are versed in either human or veterinary medicine, that the ingestion of deceased meat and milk is the direct cause of much disease and death in the human family. The practically universal use of meat and milk as human food in all civilized countries renders the question of their freedom from disease of pressing import to the health of the nation.

Meat inspection possesses great importance also in relation to national economy, as it affords the best and most avail-

able means for the prompt detection of the existence of contagious diseases among animals, indicates the location and extent of the infected area, and enables the government to institute elaborate study into their nature and causes, and the influence of climate, soil and other environments upon them, and to promptly apply remedies for their control or eradication.

In our opinion meat and milk inspection should be carried out primarily in the interests of the intended consumers of the food products, and not, as is too often the case, in the interest of the producer.

It should constantly be remembered, however, that the unwarranted condemnation of unhealthful animal food, or that which could economically be rendered sanitary, is a waste of food resources which no nation should tolerate, since by this waste the price of meat is advanced proportionately, and thus rendered less and less available as a food to those who stand in greatest need of it—the poorer laboring classes.

The early Jewish meat inspection was carried out with especial reference to Jewish consumers, and strictly forbade the use of the flesh of diseased animals as food for their own nation, although it would appear from the Mosaic law that such diseased flesh could be sold to other nations, if they desired to buy. Their meat inspection partook of the character of a religious rite, founded, doubtless, on sanitary reasons well known to the Jewish priests. The religious phase of this inspection was probably highly essential to effectiveness, since religious reverence and awe constitute the main source of power in ecclesiastical governments. If an animal was condemned on account of tuberculosis, the greed of the owner could in no way be so effectually controlled and silenced as by the invocation of ecclesiastical law. At the same time, under the tribal relations of the Jews, he could probably evade the use of a part of the deceased animal for his own food, only with difficulty.

Among the great mass of the human family, where religious sentiment fails to enter into the question of human food, the consumer has slaughtered and inspected the animals in-

tended for use as food in his own family, or has relied upon the sterling honesty of his butcher.

Recent social, political and commercial changes have seemed to separate farther and farther the consumer of meat from the producer, and a knowledge of its fitness for food becomes more and more difficult to obtain, until under our present environments the meat we obtain at a butcher's stall might appropriately be termed a mystery. An Eastern capitalist, who is in no wise learned in regard to the diseases of cattle, owns a ranch some 3,000 miles distant in a Western Territory, which he visits at intervals of several years, and leaves the sale of cattle to irresponsible men, who neither know nor care whether they be healthy or not, and from his hands they are shipped 3,000 miles to a great slaughter house, where the cattle are bought for the express purpose of slaughtering to sell again, and thence the meat is sold to a wholesale meat dealer in some distant city, or, perhaps, several thousand miles away in some foreign country, then again resold to a retail butcher, who finally disposes of it to the consumer. Until within the past few months this process has taken place in this country under the solitary eye of the interested seller, solely from a mercenary standpoint, and leaving the consumer in the most absolute ignorance possible as to the source and sanitary condition of his meat supply. The meat consumers had thus reached the climax of ignorance as to their meat supply, and had attained the pinnacle of danger to which a people can be subjected through the use of diseased meat.

Other countries, have, in some cases, quite old established meat and milk inspection laws, and under the goadings of national enthusiasm and love of country, it has been reported that certain of the most highly civilized European nations have ample inspection laws which are effectively administered by a thoroughly trained and organized corps of inspectors.

In the matter of government meat inspection, Germany claims, and perhaps justly, priority in point of effectiveness, but if we are to judge the work by its fruits in the prevention of the transmission of diseases from animals to man, or by the evidence adduced by the highest German authorities

themselves, they yet fall far short of an ample law effectively administered. If this can be said of Germany, still more may be asserted of other nations.

The prime obstacle to effective meat and milk inspection has ever been and will continue to be the irrepressible and unavoidable conflict between the mercenary interests of the seller and the sanitary interests of the consumer, and upon a scientific and practical adjustment of these interests must meat inspection rest if it is to succeed.

In essentially all respects the interests of the producer and consumer are identical under a judicious meat inspection, and it is rather due to unscientific and irrational laws and actions that these interests are usually brought into violent conflict. Nutritious meat which is wholesome, or which can be readily rendered healthful, is as much, nay more, of a loss to the poor laborer than to the wealthy stock breeder or meat dealer, for while each carcass excluded from the market serves to increase the profits on those remaining to the seller, they inversely render the procuring of a suitable quantity and quality of meat more difficult for the poor.

Bollinger has well observed, "Were statistics available as to how many persons have died from insufficient nutrition, especially from the want of sufficient nutritive meat, we would find a much larger percentage than from the use of the flesh of diseased animals for food." We are thus reminded by this very eminent authority that we should, for humane and national economic reasons, be exceedingly careful to not exclude meats which are or can readily be rendered highly suitable for human food.

We have already stated that meat inspection should be made primarily in the interests of the proposed consumers of such meats.

When a Jewish rabbi, either personally or through a duly authorized party, inspected the meat for a particular tribe or clan, and carefully guarded the interests from a sanitary standpoint of his own tribe and kinsfolks, his work was c-complished, and the matter concerned only the immediate tribe.

Civilization, with its centralization or power, and breaking up of small tribes or clans and the organization in their stead of vast kingdoms, empires and republics with the great commercial changes, has rendered the ancient Jewish laws in some of its phases inapplicable to our present needs. In our country, with our meat producing animals reared at one point, killed at a distant slaughtering center, and then distributed to every part of the union, the nation becomes the consumer of meat, and so national meat inspection becomes a necessity. The people of the United States cannot consume the entire meat product of the nation, but have a vast surplus which it is desirable should be sold into foreign countries where, from the density of population or other unfavorable environments, there cannot be sufficient meat produced to supply the necessities of its people. In such event, if we would conform to the proposition that meat inspection should be primarily in the interests of the consumer, it is evident that, if we are to enjoy a large meat export trade, that the inspection of such food products must be so conducted as to properly guard the health and lives of those by whom the meat is to be used.

To this end opportunity must be given to the importing countries to know that the inspection is skillfully and conscientiously performed.

It is possible that other than sanitary reasons may lead a State or nation to exclude from its markets the food products of another. We recently witnessed the ineffectual attempts of certain States to exclude dressed meats imported from others by laws apparently inspired by the desire of the affected States to protect their cattle-raisers, and the assertion of Bollinger that to his mind more persons die from the want of a due amount of meat than from the eating of diseased meat would indicate that some of the great meat importing countries of Europe base their exclusion of foreign meats upon political rather than sanitary causes.

Your committee, appointed largely for the purpose of continuing the study and discussion of Dr. Schwartzkopff's paper on "National and International Meat Inspection," read before this Association at its last meeting, find it impracticable to

review every part of his production at length. We will pass over his remarks as to how meat inspection should be carried out, merely stating that we are in full accord with the author and believe with him that meat inspection should be only undertaken under just and sufficient laws, in conveniently arranged public abbotoirs, and by qualified veterinarians fully competent to measure the significance of pathological lesions with which in the course of their duties they will meet, and that the inspection should be carried out by such persons and in a manner to properly guard the health and command the confidence of the intended consumers.

It has been quite a common custom in many countries requiring meat inspection to confide that trust to some political hanger-on whose qualification rests solely upon political services rendered or promised in the future. It is evident, however, to any intelligent person that this duty should be performed by a person well versed in pathology, for, as Bollinger has well observed, "meat inspection in its highest sense is applied pathological anatomy."

The recently enacted United States meat inspection laws appear to be, in most respects, adequate and beneficent, and although it is as yet too early to speak of their execution it is safe to predict that with experience and organization our meat inspection service will prove eminently satisfactory so far as our laws extend.

The law apparently has some imperfections which might be remedied with benefit. The provision in Section 7 of this act, which allows "farmers" a peculiar exemption from the general provisions of the inspection regulations and permits him to slaughter diseased animals and transport the meat into other States and sell it for human food apparently nullifies, to a very dangerous extent the beneficent provisions elsewhere found in the act and offers inducements to the favored farmer to retain his diseased animals on his farm until slaughtered and the more apparent evidences of disease are annihilated before offering it for sale.

The failure, perhaps incompetency, of this law to provide for the destruction of diseased meats and barely excluding

them from foreign or inter-State commerce tends strongly to vitiate and deteriorate the inter-State or local meat supply. In effect the United States Meat Inspection Law throws back upon the State any animal which may be unfit for human food, and unless the State maintains rigid meat inspection laws (and most of them do not) this provision renders our local meat supply worse instead of better and benefits only the foreign or extra-State consumer.

The Mosaic laws interdicted the use of diseased meats by the Jews themselves, but permitted them to sell it to aliens while our national meat inspection law reverses this order and forces diseased meats upon the local markets.

These provisions will doubtless lead to the enactment of other laws adapted to relieve local meat consumers from this danger.

The mode of inspection is a question upon which most sanitarians readily agree. There are certain diseases of animals which admittedly render their meat unfit for human food and which being readily recognizable during the life of the animal warrants the inspector in condemning and killing the animal and destroying the carcass. Other animals require a post-mortem examination in order to verify a diagnosis or to discover diseases not discernible during life.

The principal question, the vital one in meat inspection, is what meat shall be excluded from use as human food? The recent meat inspection law of the United States merely excludes the meat of diseased animals without enumeration or classification, and without dictating what use shall be made of the affected animals or their meat or food products.

Dr. Schwartzkoff, in his previously mentioned paper read before this Association, attempted a classification which to the mind of your chairman seems quite arbitrary, impracticable and open to considerable criticism.

He divides the whole category of disease animals into three classes:

(1) Diseases in which animals should be condemned, killed and the carcasses effectually destroyed, viz.: Anthrax, rabies, septicaemia, cattle-plague, glanders, small-pox in sheep, swine-plague, and hog-cholera and unborn animals.

(2) Diseases in which slaughter may be permitted to ascertain whether the whole or a part of the meat is fit for human food or to be used for industrial purposes, or to be destroyed, viz.: Food and mouth diseases, tuberculosis, actinomycosis, bovis, icterus, milk fever in cows, hydrothorax and ascites, all diseases which are combined with high fever, general emaciation and debility; for instance, pneumonia, enteritis, uteritis, etc.; and over-heated and too young animals, which should be kept for further examination.

(3) Diseases only ascertainable after slaughter, and in most cases by the use of the microscope. Under this head he enumerates the entozoa, known to affect meat producing animals and one bacteriological disease—actinomycosis suis. How the essayist managed to draw his lines in such a manner is not understood by your chairman.

It is not clear to us why, under his first class—diseases in which animals should be condemned, killed and the carcasses effectually destroyed—he should place glanders, which in many cases cannot be diagnozed except post-mortem, nor hog-cholera, which in its chronic stage may in some cases closely stimulate trichinosis, nor can we discover his authority for denominating an unborn animal "diseased" and condemning it to death and destruction.

Again in his second class he would permit the slaughter of animals affected with tuberculosis, a disease admittedly transmissible to man and might allow its meat to be sold food, while under his first class he would exclude swine-plague and hog-cholera, which are certainly not transmissible. Again he places septicæmia in his first class and destroys the carcass, while uteritis—which is septicæmia beginning in the uterus—he would place in the second class and perhaps allow it to be used as human food. He would kill a cow with milk fever in order to ascertain the suitability of the carcass for human food, when we cannot see what new guide for action would be revealed post-mortem. Under his third class, without stating or suggesting the line of action to be followed as to the use of the meat, he places actinomycosis suis, while all other bacteriological diseases, even actinomycosis bovis are placed in the other two classes.

It seems to your chairman that veterinary science is at present sufficiently developed to admit of and to demand a scientific classification of diseased or unhealthy meats, which without enumerating all diseases of animals would serve as a guide in the inspection of meat.

We would not attempt a classification upon the basis of the time at which the disease could be detected and determined upon, but would say that all animals intended for slaughter should first be inspected alive, and if there is sufficient evidence of disease to plainly warrant condemnation, the inspection evidently need go no farther, while in case such evidence is wanting, then permit slaughter and complete the inspection by the necessary post-mortem examination. We would attempt a classification based upon the source or rather the kind of danger which the diseased meat bears for man.

By such a scheme we would have four classes:

(*a*) Parasites of meat capable of partial or complete development in the human body.

(*b*) Diseases due to micro-organisms or in the course of which micro-organisms develop, which do not find suitable media for growth in the human body, and which, therefore, can only act injuriously upon the human body through their excretions or productions of some chemical poison due to their presence.

(*c*) Diseases produced by micro-organisms capable of multiplication and growth within the human body, and which also produce chemical poisons which, when consumed, may produce toxic effects.

(*a*) Bacteriological diseases transmissible to man in which there is no danger from the ingested bacteriological products, but entirely from the micro-organisms themselves.

We need not enumerate the individual classes under this method of arrangement.

Under class A we have a long list of parasitic diseases, which in meats offered for sale are mostly found in a natural state, or matured to the highest point possible in the host, *e.g.*, encysted trichinæ, larval forms of tænia, etc., and rarely affect

the general condition of the body of the host, and can only injuriously affect the consumer by the ingestion of the living parasite. In such cases, thorough cooking of the meat under official control renders it safe, and only objectionable from a sentimental standpoint.

More rarely it happens that some of these parasites, by invading vital organs, may cause a general derangement of the system, which, by producing grave pathological conditions, fever, emaciation, anasæca, etc., as is seen in larval forms of tape worm in the brain, in strongyli of the lungs and bronchi in cattle and sheep, strongyli of the arteries in the horse, distoma hepaticum of cattle, or by wholesale migration to every part of the body, as in the first stages of trichinosis.

In all such cases the entire carcass, and in those where the parasites, although in a passive state, are yet so abundant as to be abhorrent, all infested parts of the carcasses of the affected animals should be not only condemned and rendered inocuous under official supervision, since the condemnation of some kinds of parasitic meat, and allowing it to be consumed raw by dogs or other lower animals, renders the extermination of such diseases impossible, and not infrequently gives the parasite opportunity to undergo one more stage of development and return to man in a far more dangerous form than that found in the condemned meat.

Consequently, provision should be made for the complete destruction of these animal parasites before the condemned meat passes from official control.

Under class B we place the flesh of animals diseased from a malady not transmissible to man, but which may contain chemical substances, ptomaines or other organic substances which, when ingested, may produce serious constitutional disturbances. Included in this class we find a large number of sporadic affections accompanied by variations in temperature, nutrition, etc., of a more or less grave character, as in ordinary pneumonitis, pleuritis, enteritis, etc. It includes also a long list of contagious diseases of animals, among which we find the most destructive epizootics, exerting in most cases great influence on our national economy. Among these are

contagious pleuro-pneumonia, hog-cholera and closely allied diseases, Texas fever and many similar affections. We believe it to be generally conceded that in all this class the flesh of such animals is only rendered dangerous as human food when the disease-processes have attained such a stage as to produce a decided variation of the body temperature, marked emaciation, or other grave pathological conditions, in which cases the meat should be absolutely condemned as human food and only permitted to be used for industrial purposes after the carcass has been rendered inocuous (in case of contagious disease) to other lower animals.

Class C might with profit be divided into rather indistinct sub-classes;

1st. A group of what we might term "sporadic" infectious diseases, such as pneumonia, pyo-thorax, pyæmia, septicæmia, enteritis, septic enteritis, pyo-septhaemia or omphalo-phlebitis of new-born animals, recent infected wounds, etc.

This includes one of the most important classes of diseased meats in the entire category, although from their nature they are of comparatively little concern to our subject proper—national and international meat and food inspection—because they are ordinarily slaughtered for local use. Bollinger has well observed that of all authenticated cases of death from the consumption of diseased meats that eighty per cent. were due to the use of flesh from "nothgeschlacteten thieren," or animals slaughtered when death from other causes was imminent, in order to avoid financial loss to the owner. These animals, slaughtered under urgent necessity, belong almost, if not wholly, in this subdivision, or rather they constitute it.

In our second sub-class we include the epizootic contagious diseases of animals which are transmissible to man, and which also produce within the animal body ptomaines or other chemical products of a dangerous toxic nature—rabies, anthrax, acute and constitutional glanders, tuberculosis and actinomycosis. The entire carcass of animals coming within this class should evidently be destroyed completely, both for sanitary and economic reasons.

Under class D we would place three closely allied affec-

tions which constitute the most stubbornly contested field in veterinary and medical sanitary science, having engaged the attention of sanitarians for years, and promising yet much controversy ere the questions are settled. Upon this class your committee has found it impossible to agree. This class includes, in our present state of knowledge, three diseases, or rather a form of three of the maladies enumerated under the second sub-class of class C. They are the chronic local, or perhaps more properly, latent form of glanders, tuberculosis and actinomycosis. They have many characters in common, so much so that we have been enabled only recently to differentiate them. Actinomycosis was long known in one form as glanders of cattle, in other forms as tubercular stomatitis and tubercular enlargement of glands, while in man actinomycosis was known as a variety of tubercular affection. All are peculiarly widely disseminated over the world, are in many cases exceedingly latent or passive, often discernible only by post-mortem inspection, may exist in certain individuals for an almost indefinite time without inducing noticeable constitutional disturbances, and all having a predilection for the lungs and lymphatic glands; again their admission to the animal economy may effect their extension largely through these. The micro-organisms are highly gregarious in their habits, and have a great tendency to become encysted in vari-sized cysts with fibrous or fibro-calcareous walls. This encystment renders the enclosed micro-organisms passive, or rather in many cases they retrograde and even perish, and thus in all cases, through this encysting process, a large portion of the bacilli, sometimes, so far as we can discern, all of them, become so encysted and render the affection wholly latent, and later these bacilli may largely or wholly perish and recovery of the animal follow, and in two, if not all three diseases, with immunity from future attacks.

All are transmissible to a wide variety of animals, and the micro-organisms thrive in vegetable media. In a healthy animal the digestive processes are usually fatal to the etiological moment.

The transmissibility of glanders to man, and the danger-

ous character of glanders-affected meat for human food is, we believe, universally conceded.

The contagious character of tuberculosis among the lower animals has been well attested in every possible respect. First, by clinical observation. Second, by experimental transmission. Third, by the production of immunity from subsequent exposure. Its identity in the various lower animals and in man rests upon as thoroughly tested a basis as is recognized in medicine and the inter-transmissibility between man and animals has been equally well established. Space forbids that we should consider the question of the fitness of the meat of mildly affected tuberculous animals for human food beyond the general conclusions as to the entire class.

The third affection in this class, actinomycosis, constitutes at present the most stubbornly contested ground in the whole question of meat inspection from a sanitary standpoint, and it has been found impossible for your committee to agree. Consequently your chairman has felt compelled to present his personal views in the body of the report, and has asked Prof. Schwartzkopff to give as completely as possible the contrary phase

The fundamental point upon which rests the classification herein proposed, is the question of the contagiousness of actinomycosis. What constitutes a contagious disease? Based upon the derivation of the word and the knowledge of the class of diseases to which it has been applied, it has been held to signify a malady transmissible by contact or approach.

Later developments in medical knowledge have gradually led us to apply this word in a more restricted sense, excluding internal and external animal parasites, and meaning more particularly those highly contagious affections due to the invasion of vegetable micro-organisms.

We would then say that in the present light of medical science, when speaking of contagious diseases in a restricted sense, that we apply the term to those affections due to the invasion by a micro-organism, of a more highly organized body, wherein the invading organism finds all the conditions and environments essential to its growth and reproduction, and in

which the newly generated organisms are capable of attaining the same degree of development and maturity as the initial invading entity, and hence becomes capable of transplantation to other analogous organisms. In other words, if glanders bacilli are introduced into the living tissues of a soliped not previously rendered immune, and they multiply and the new organisms attain the same development as that possessed by the bacilli constituting the initial inoculation, then these new bacilli must be equally capable of transplantation with the old, and hence under the present meaning of contagion glanders is contagious.

During the discussion of Prof. Schwartzkopff's paper on meat inspection he says: "As to the question of actinomycosis, as I said before, theoretically it is not contagious. . . . I do not believe it is contagious, and I base my opinion on my own experience as well as my theoretical studies in handling cattle in the Berlin slaughter-houses." The basis of Prof. Schwartzkopff's conclusions seems to your chairman somewhat vague.

We fail to comprehend how in ordinary routine work in a Berlin slaughter-house, a disease can be classified as contagious or non-contagious. He has not given us any data from his theoretical or practical knowledge of the disease which throws the least light or reason upon his conclusions.

Your chairman, in union with most veterinarians throughout the world, believes it is contagious, and predicate our belief upon the following facts, which will probably be admitted by Prof. Schwartzkopff: (Am. Vet. Rev. Vol. XIV, p. 495).

1st. Bacteriologists, so far as we can learn, universally agree that the micro-organisms found in actinomycosis at lungs, lymphatics, liver, bowels, muscles, etc., of lower animals and man are all identical with the reproduction of the actinomyces found upon various forms of vegetable food, that in these groups of actinomyces in the affected animal body are to be found micro-organisms identical in morphology, maturity, vitality and reproductive power with the actinomyces found on plants.

2d. It is universally agreed that actinomycosis is due to

the invasion of and multiplication in the animal body of these actinomyces or ray fungi. Under the definition we have proposed for *contagion*, these two factors render this disease contagious.

3d. It it generally, if not universally, admitted that actinomycosis originates in animals through the lodgment and multiplication of actinomyces in wounds or abrasions of the skin or mucous membranes, probably in some cases by the inhalation and lodgment of the fungi in the air cells. This fact rests upon abundant and authentic clinical records.

Observations of the disease in man, where the history is traceable, makes it evident in every case that the disease was due to infection through external wounds. Dr. Bodamer relates a case in a miner where the infection was evidently due to the introduction of actinomyces into a wound. Dr. Schiemer records a case in man referable to wound infection, and also Ponfick.

Other recorded cases in man are strongly suggestive of inoculation during mastication of actinomyces-containing food, by means of abrasions of the gums and about the teeth. Compare cases recorded by Dr. Murphy, N. Y. Medical Journal, 1885, p. 17; Dr. Ochoner, Journal American Medical Association, 1886, p. 608; Israel, in Virchow's Archives, Vol. LXXIV; Ponfick, De Aktinomykose des Menschen, Berlin, 1882; Rosenback, Centralblatt fur Chimyie, 1880.

Were the history of inception of actinomycosis of the internal organs of man available, they, too, would doubtless exhibit distinct evidence of inoculation through a wounded, abraded or extremely delicate membrane, after ingestion or inhalation of actinomyces.

Clinical observations of veterinarians in connection with the origin of actinomycosis in animals indicate clearly and beyond contradiction that the disease is due to the transplantation of the ray fungus from some other organism to a wounded, abraded or extremely delicate surface.

Once the micro-organisms have invaded a wound and have found suitable ground for their growth and multiplication, it is admitted by all scientists that new crops, without known

limit as to number, generate, mature and perish, while the disease spreads and augments, or sometimes declines in varying degrees.

These propositions are admitted, so far as is known to your chairman, by all scientists, whether they believe the disease contagious or non-contagious.

3. Experimentation, the crucial test as to the transmissibility of a disease, fully bears out the above facts. Johne (1) transmitted the disease by inocculation in 75 per cent. of trials with fresh material from a diseased animal.

Ponfick (2) likewise suceeeded readily in transmitting the disease in cattle by intra-venous and subcutaneous injections, but failed to transmit it by feeding the fungus to cattle, and had negatiye results in inoculations in dogs and rabbits. Bodamer (3) records six successful inoculations out of thirteen trials with dogs, cats and rabbits—animals apparently only slightly susceptible.

Israel (4) and Kolter succeeded in inoculating rabbits with actinomyces from man, while Cruikshank (5) had a similar result from inoculating cattle with the fungus from an affected man.

Clinical observations lend strong support to the theory of the transmissibility of the disease from animal to animal. Casewell (6) reports an extensive outbreak of actinomycosis in cattle and hogs bearing strong evidence of indirect transmission from animal to animal by means of food soiled with discharges from actinomycotic abscesses of an affected animal. Your chairman has observed similar instances where 50 to 75 per cent. of a cattle herd was found affected, apparently due in a great measure to transmission in this way from animal to animal. In company with Casewell and other other veterin-

(1) Johne, Actinomykosis Bericht ueber d. Veterinarwesen in Konigreich Saschen, 1881.

(2) Ponfick, Die Aktinomykosis der Mensshen, eine neue Infectious-krankheit, Berlin, 1862.

(3) Jour. Comp. Med. and Surgery, Vol. X, p. 120.

(4) Centralblatt f. Bacteriologie n. Parasitenkunde, B. LII, No. 14, 1888.

(5) An. Rep. Ag'l Dep., England, 1885.

(6) An. Rep. State Bd. Live St'k Com., Illinois, 1890.

arians (1) we saw an extensive outbreak in the distillery cattle sheds of Peoria, Ill., in 1889, where inter-transmission apparently played a very important role. The extension of the disease seemed due to the fact that badly affected animals were kept in the sheds with the healthy. Large abscesses about the throat and jaws, being irritated and abraded by contact with high mangers, discharged large quantities of actinomyces-containing pus, into the troughs, along which flowed the slops to neighboring cattle, and the inoculation of the healthy cattle was favored by their being supplied with very coarse, hard, wild hay, which evidently served to abrade the mouth and pharynx.

A long list of the leading scientists of the day might be quoted who believe in the contagiousness of actinomycosis, such as Bollinger, Ponfick, Johne, Friedberger, Frohner, Israel, Rosenbach, Dixzozen, Lendquist, Neller, Peroncito, Ochsner, Cruikshank, Fleming, Liautard, Law and others, almost without number. In fact, it seems, in so far as your chairman has been able to learn, that contributors alike to standard and current veterinary literature of a recent date are all agreed that the affection is contagious. We understand that Prof. Schwartzkopff and other dissenters have given voice to their theories and deductions through the columns of the agricultural or live-stock press and avoided placing their views in form or place where it would come within proper range of scientific criticism. We trust that now, for once, Prof. Schwartzkopff and his colleagues will present their non-contagious theory of actinomycosis before this convention, from a scientific standpoint, aad permit their arguments to be weighed upon a strictly scientific as well as practical basis. We desire that Prof. Schwartzkopff should fully explain his statement at our last meeting that he predicated his belief of the non-contagiousness of actinomycosis on his theoretical studies and his practical work in the great abattoirs of Berlin. What great veterinarians of Berlin taught our fellow-committeeman that actinomycosis was non-conta-

(1) Special Rep. State Bd. Live St'k Com., Illinois (Actinomycosis in Cattle), 1890.

gious, while such Germans as Johne, Ponfick, Rosenback, Friedberger, and such veterinarians of the great Berlin Thierarztlichen Nozkschule as Frohner, unitedly, and without fear or apology, denominate the disease as infectious? What facts has he learned in the slaughter-houses of Berlin that demonstrate the non-transmissibility of the disease?

Granting the transmissibility of actinomycosis, and thus supporting the above classification, we are prepared to consider the three members of the group jointly in their relation to meat and food inspection. The use of the flesh of solipeds has not gained sufficient popular sanction in this country to warrant us in consuming your time by referring to glanders.

Admitting the identity of human tuberculosis and actinomycosis with these two diseases in lower animals, and the proof of their transmissibility, the question which confronts us is, what, if any, parts of affected animals are safe for human food, or can be readily made inocuous?

Upon this question there is a great variation of opinion, rendering any definite conclusions which would be accept able to all extremely difficult, if not impossible.

We have taken the stand that in these chronic or pas sive forms of disease the sole danger to the consumer of the meat or milk of affected animals exists in the living, virile micro-organisms, so we are at once brought to inquire in what parts of the animal body do the germs exist, and in what parts are they absent.

Many contend that only those parts which are evidently affected should be condemned and destroyed. This is apparently the idea of Dr. Schwartzkopff in relation to tuberculosis in his remarks on his paper of last year, but a careful study of his utterances leaves one in doubt as to his real belief.

The warrant for the custom of condemning and destroying parts evidently affected with one of these maladies and allowing the remainder of the carcass to be used for human food must rest upon one of two propositions: 1st. That the micro-organisms exist only in those parts where their existence is plainly evidenced by the agglomerations; or, 2d. Upon the theory that meat from diseased animals must be

considered inocuous until the presence of the infecting element in the part in question has been fully demonstrated.

It must be admitted with regard to the first proposition that these germs may exist in agglomerations in parts of the animal not usually seen by the inspector, e. g. meningeal tuberculosis. There is, further, very good evidence that the germs of these maladies are transmitted from part to part along the natural course in the lymphatics. This is very nicely shown clinically in actinomycosis in man and cattle. In the latter the origin of actinomycotic abscesses in the lymphatic glands in the region of the throat can frequently be clearly traced post-mortem to an initial inoculation in the pharynx which has nearly left sufficient trace of invasion to demonstrate the role which this part has played as the point of inception of a disease which is to find a suitable field for development only after the etiological moment has traversed for a comparatively great distance through the channel of a small vessel. We observe this lymphatic transmission most beautifully in antinomycosis of cattle, beginning at or near one of the feet and slowly but steadily moving along the course of the lymphatic vessels, destroying by suppuration the glands; some of the germs even succeed in passing these sentries ere their destruction prevents further progress, continuing their ravages toward the central portions of the body. Evidently the actinomyces are usually some distance in advance of microscopical pathological changes, and we cannot judge to what extent a part is invaded except by an utterly impracticable and laborious microscopical examination with but little warrant of reliability.

The migration of tubercle baccilli and actinomyces through the blood vessels seems to be proven beyond reasonable doubt.

It is true that with but a few years' study of these diseases we have recorded but few evident cases of such transmission; but we feel that they quite suffice to overcome negative testimony, although possibly far more voluminous.

Friedberger and Frohner (1) say that it seems possible that actinomycosis can be disseminated by means of the blood,

(1) Pathol. u. Therape d. Hausthiere, Bd. II, S. 545.

while in case of tuberculosis (1) they assert that it may and does extend in diverse ways:

(1) By the lymph channels. (2) By continuity or contiguity. (3) By the blood circulation.

This blood infection and extension happens by the rupture into blood vessels of tubercular nodules or tubercular affection of the vessel walls. It is well shown when the bacilli are excreted in the milch, from an apparently healthy udder. Hamburger (2) cites a case of actinomycosis in a colt one and one-half years old contracted presumably during decubitus through wounds produced by splints applied to correct rachitic deformity of the legs, in which in bones and cartilage and finally in the arteries themselves, was found actinomyces.

We are forced to conclude, therefore, that once an animal is affected in a local or passive form with one of this group that we have no reliable means at our command for determining that apparently healthy parts are in reality sound.

We believe further that it is the duty of the meat inspector rather to be able to say if meat is *fit* for use as food than *unfit*. Where question is raised as to the fitness of given food we hold that the consumer should be granted the benefit of the doubt, and that the inspector should be able to say unreservedly that the meat is wholesome before he permits it, upon his sanction, to be sold for human food.

The recently enacted U. S. meat inspection laws are as precise, with all their brevity, as can well be devised. It makes simply and only two classes of meats—those from well and diseased animals. The former is passed as wholesome, the latter rejected.

This is the true, safe line, and affords between the flesh of animals dead from disease (which all civilized people abhor as food) and that of healthy animals a neutral ground, which should act as an effective barrier to the use of this repulsive and dangerous food, which with our present laws is yet rendered possible in our local markets.

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(1) Ibid S. 505.

(2) Holl Seitchrift f. Thierheilkunde, etc., Bd. 16, Lf. 2 and 3.

The meat of animals slaughtered at a time when death from disease is imminent can not be considered preferable to those which have died from the ailment. What possible difference can it make from a sanitary standpoint if a cow with parturient apoplexy is slaughtered or allowed to die from the disease one-half hour later?

The neutral ground—disease—between health and death is one which the meat inspector should enter with caution, and so we do not hesitate to assert our belief, predicated upon the foregoing reasons, that the meat of diseased animals of this group should not under ordinary conditions be passed as wholesome food.

As we suggested at the outset, however, we are equally firm in our belief that from the standpoint of humanity and national economy we have no right to destroy wantonly and uselessly such an enormous food supply as the unqualified destruction of these meats would entail Since the whole danger in the consumption of these meats rests upon the presence, or possible presence, within the parts used as food, of living, transplantable micro-organisms, it is evident that any process to which it can be subjected without destroying the nutritive value, and yet effectually and beyond all doubt destroy the micro-organisms will render the flesh *sound* from a strictly sanitary standpoint. Consequently we would say that the apparently healthy parts of such diseased animals should be thoroughly and effectively cooked (boiled) under official supervision and then passed as sound meat, while the evidently affected parts should be destroyed.

Such a course evidently renders these meats equally safe to that of the healthiest animal or perhaps even more so, for we cannot at all times discern what insidious disease be lurking unseen in an apparently healthy body.

We have refrained from dwelling on all the phases of the subject of meat inspection as suggested in Dr. Schartzkopff's excellent paper of a year ago because time would not permit, but have confined our consideration mainly to those questions which seemed to us most in dispute and which would in our belief lead to the most spirited and profitable discussion.

LOCAL TUBERCULOUS ABSCESS IN A BULL.

By Wyatt Johnson, M.D., Montreal.

[Paper read before the United States Veterinary Medical Association.]

The importance which now attaches to the early recognition of tuberculosis in herds of valuable cattle, makes it of interest to record the following unusual case:

On March, 11th, 1890, I received from Dr. D. McEachran, of Montreal, a specimen of pus, with the statement that it came from a small abscess about the jaw of a valuable thoroughbred bull, and the owner of the animal feared that it might be suffering from tuberculosis.

The history of the stock did not give any evidence of tuberculosis having occurred among the other animals, though it had appeared about two years before on an adjoining farm, and the present subject had served a cow in this herd during the previous season.

The present animal, a fine, strong, healthy-looking bull, four years old, was always in perfect health till two months previous, when the attendant noticed a swelling beneath the jaw. This suppurated and was opened, but did not heal up. Recently another small abscess formed in the neck which also did not heal when opened. The attendant thought that the inflammation was caused by the chafing of a rope around the animal's neck in the stall.

The pus when received was grayish and oily looking, like freshly mixed paint, with faint streaks of red. It contained numerous, small, bright yellow particles the size of pin-heads and some small, gritty bodies of about the same size. Miscroscopically, it was composed of leucocytes, a few red blood-cells and also crystals. The yellow particles proved not to be actinomyces. Cover glass preparations (ten in number) were examined without detecting tubercular bacilli. Some of the covers were left as long as eighteen hours in the stain. No other bacteria appeared to be present.

I inoculated three rabbits in the anterior chamber and three guinea-pigs in the peritoneal cavity, using one or two drops of pns in each case. A guinea-pig and a rabbit were placed for control in the cages with the inoculated animals.

On March 15th I visited the farm in company with the owner and Prof. McEachran. The bull was found to be a fine, healthy-looking, well-nourished animal. Beneath the jaw were two small suppurating abscess cavities on the left side, with red, firm granulating walls. Lymph glands in the neck not enlarged. Physical examination showed no evidence whatever of tuberculosis.

In spite of Dr. McEachran's recommendation to delay a few weeks till we learned the result of the inoculation, keeping the bull meanwhile under observation, and carefully isolating him, the owner insisted on his being slaughtered immediately, together with a yearling bull, the son of the one under consideration. Accordingly we had an opportunity of making an autopsy on both animals forthwith, but failed to detect any evidences of tuberculosis in either the internal organs or glands. The penis, testes and vasa deferentia were free from tubercles. The abscess cavities appeared to be purely subcutaneous in location and showed no evidences of tubercles or caseous masses in their vicinity. The bodies of the vertebræ were free from tubercles. As the meat was intended for sale the muscles and intermuscular planes were only examined as far as could be done while the carcass was being dressed.

My notes of the inoculations are as follows:

On March 16th, one of the rabbits shows pauophthalmitis. In the other two the necrosed wound is nearly healed, but slight plaisticiritis persist.

March 18th. Examined sections made through the portions of the abscess wall hardening in alcohol. These showed a superficial necrotic zone surrounded by granulation tissue formed of small, round cells. No giant cells. A large number of sections were examined for tubercle bacilli without finding any. (This examination was again repeated on April 24th, still with a negative result. The absence of actinomyces was also confirmed.)

April 11th. One of the guinea-pigs had been wheezing for

a week and losing flesh rapidly. Died to-day. Autopsy: Over parietal peritoneum a few pearly gray nodules. Omentum shows small, gray granulations with opaque centers. Spleen contains yellow white opaque nodules about the size of split peas. Microscopic examination of sections of the spleen shows a few tubercle bacilli in every field.

April 24th. All the animals killed to-day. The control animals found to be free from tuberculosis. The two remaining guinea-pigs present similar conditions to the one which died on April 11th, tubercle bacilli being found in the spleen in each case.

The three rabbits all showed extensive tuberculous inflammation in the regions of the iris. Tubercle bacilli were found in each case. Two of the rabbits showed caseous nodules in the lungs and spleen which contained numerous tubercle bacilli.

I have reported this case in detail because I have not been able to hear of a similar one when the disease was limited in this peculiar manner.

It is of interest, owing to the conclusive results of the inoculation experiments, when a most careful microscopical examination had failed to detect tubercle bacilli. The apparently purely local nature of the lesions is also interesting. It is seldom that an opportunity of examining a valuable animal post-mortem is insisted on by the owner in such an obscure case. From the appearance of the abscess wall it is probable that recovery would have been complete had the animal been allowed to live.

Unfortunately, the suspicions of the owner were well grounded, and he lost in the following year a valuable cow from tuberculosis. In this case a large fungating, ulcerating growth, as large as an egg, projected from the vocal cords, and Dr. J. B. Page, of Amherst, who examined the organs, was able to demonstrate masses of tubercle bacilli actually in pure culture in necrotic spots from the larynx and liver.

It would have been preferable had I also made inoculations with material from the abscesses taken at the time of the autopsy under aseptic precautions. The fact, however, that of the material sent me (six separate samples) each gave positive inocula-

tion results, seems to leave no doubt that the infection was in no way due to extraneous contamination. It must be remembered that at the time of the autopsy we came to the conclusion that the case was not one of tuberculosis, and, therefore, no further confirmation was sought.

The fact that two separate cases of tuberculosis in unusual localities in this herd occurred within a year, seems to indicate some unusual source of infection. None of the farm hands had tuberculosis, as far as could be learned. Possibly the infection may have been accomplished through the agency of some smaller animals, rodents for instance, about the farm, in whom tuberculosis would not be suspected.

The fact that no subsequent cases appeared in the herd this year points to some transient source of infection of an unusual character.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."—VETERINARY RECORD.

INVERSION OF RECTUM.

BY HERBERT S. ADAMS, CLARKSVILLE, MD.

July last I was called to see a case which was new to me. Patient a bay gelding four years old; upon examination proved to be prolapsus ani; it was in two large lobes lying superior and inferior, allowing the feces to pass out between. The superior lobe was six inches in its smallest diameter and seven inches in its largest. The inferior lobe was nine inches in its largest diameter and seven in its smallest. History of the case as far as I could find out was as follows: The horse, a light riding and driving horse, weighing 1,000 pounds, was ridden the previous day and was put in a barnyard next morning, after being at pasture during the night, perfectly well and was all right at noon. At 5 A.M. one of the men discovered the trouble, and said that the horse was busted. The condi-

tion when I saw it an hour later was, the parts were very hard and circulation was partially strangled; the animal was in great pain; the lower surface of each lobe was dark with blood. Temperature 105 1-5 F., pulse full and 80 per minute. Treatment: gave tinct. aconite rad. in fifteen-minute doses every three hours until pain abated; gave injections of warm water after scarifying the lower part of each lobe, following up with injections of ice water every four hours and after each injection inserted a suppository of sulph. zinc ʒiss, vaseline ʒiii, and kept the protruding parts anointed with the same, and for an antiseptic, carbolic acid, 1 to 30 of vaseline applied twice a day to part. The third day the superior lobe gradually decreased and by the eighth day the other lobe had disappeared.

During this time the horse was fed oats in sheaf with the straw cut off, all the water he wanted to drink; gave nit. potassa ʒiss, hyposulphite soda ʒii twice daily, following up with a tonic of nux. vomica pulv. ʒi twice a day in feed. The patient regained his spirits a week after the treatment and now does hard work under the saddle.

No cause can be given, for no other horse was with him.

EXTRACTS FROM GERMAN PERIODICALS.

By Richard Middleton, D.V.S., Philadelphia, Pa.

PHLEGMONOUS ERYSIPELAS IN BOVIDÆ.

Locet has seen this disease in his district occurring in the form described below, although previous to this case it had been unknown in the neighborhood. The symptoms were constitutional as well as local.

The skin covering the left masseter muscle was enlarged by an inflammatory swelling; the membrane of the mouth hyperæmic, salivation present. The swelling encroached upon the intermaxillary space, and then to the right cheek. At this time the patient experienced anorexia and difficult respiration. The œdema, which extended posteriorly to the sternum, was well de-

fined and circumscribed, being warm, soft and painful. Fluctuation detectable at the originating point of the malady, and by incision of this portion of the anatomy, a considerable quantity of a foul-smelling fluid escaped, which contained cogaulated particles. The collection reformed, but the dyspnœa seemed relieved by the operation. From the region of the cariniform cartilage, the disease process spread upon the breast, abdomen, flanks and udder. Contemporaneously with this, the rectal temperature registered 106° F., and the animal receded rapidly in flesh and condition until death ensued by asthenia.

The autopsy exposed infiltration of the subcutaneous connective tissue, the same, when seen in localities recently usurped by the disease, contained a yellowish coagulum, but in old established centers of the affection, this clotted substance was of a dirty, grayish color and offensive to the smell.

The blood was not clotted; the liver friable and the spleen hypertrophied.

By a microscopical examination the cellular tissue appeared distended, and was occupied by a fibrous exudate containing cells. By double staining, it was possible to note the presence of micrococci, which had arranged themselves in chains.

The cocci were tinted by the Gram, and by the Gram-Weigert methods. On ordinary soils, in the presence of air, they flourish, varying in a temperature from 64° to 98° F.; they are therefore ærobic.

The intravenous, subcutaneous and intraperitoneal transplantations of the fresh cultures, when made in guinea pigs, were followed by negative results.—*Locet, in Berl. Wochenschrift.*

LEUCÆMIA IN THE HORSE.

An eight-year-old horse, previously healthy, evinced sudden weakness and unsteadiness of gait, with a great disposition to recline. Pulse regular, and numbering 68; respiration 30 and superficial; temperature 104° F. Mucous membranes tinted a yellowish gray.

The day succeeding, physical symptoms more intense; on the third day the same still more pronounced, together with great debility, anæmia of visible membranes, and œdema along the median line, extending from the pectoral muscles to the prepuce. Patient succumbed on this date.

Upon post-mortem fifteen quarts of a reddish yellow fluid were obtained from the abdominal cavity. The liver enormously hypertrophied, occupied both the right and left hypochondrial and supra-sternal regions. Lymphatic glands along the colon and cæcum enlarged to equal one's fist in dimensions, in the folds of the messentery reddish-gray globular nodules in abundance. These glands were soft, and upon transverse section offered a grayish surface streaked with reddish lines.

At the apex of the cæcum a blueish red formation as large as a goose egg. Lining membranes of the stomach normal. Interior of the small intestine opaque and gray red; the same of the colon and cæcum exhibits hemorrhagic infiltration with several erosions the size of a nickel piece.

The liver weighed eighty-four pounds; was eight inches in thickness, and forty inches broad; reddish and friable. Upon section the same peculiar strips of coloring as observed in the lymph glands. In the hepatic parenchyma innumerable tumors no larger than a mustard kernel. Lobes of the organ obliterated and not distinguishable; several cavities within surrounded by dark-red walls. Spleen swollen and measuring twenty inches in length, sixteen in breadth, and two in thickness; gray-blue externally, and yielding, not to say mushy to the touch.

Malpighian corpuscles exceptionally large. Both kidneys hypertrophied and soft, with light yellow lines running from the papillæ to the cortex. Contents of the infundibulum and pelvis mixed with pus and mucous.

Bronchial and laryngeal lymphatic glands augmented. Veterinary literature shows no other similar case of leucæmic infiltration of the liver; the exceeding size of the latter induced the *intra vitam* dyspnœa.—*Zisch. f. Vet. Kunde, IV*, 21.

UMBILICAL HERNIA OF THE STOMACH.

In a six-weeks-old sinsmenthaler calf a swelling was noticable in the vicinity of the umbilicus; this had been increasing in size for fourteen consecutive days. After permitting the formation to progress at a slower rate for six weeks longer, the owner sent for P. The health of the patient had by this time become the worse for non-attention; the hernial sac measured six inches in breadth and the same in length. Upon the most depending portion of the protrusion we could discern a few black and red spots surrounding an irregular rent of foramen through which food masses were escaping. The animal was slaughtered in order to preserve the flesh for eating purposes.

The autopsy revealed a perforation of the abomasum four inches in length; the lips of the same had become adhesive to the abdominal walls so that a natural fistula remained. Tuberculosis of the omentum and peritoneum also existed.

P. supposes the cause to have been a traumatic one; he advances the theory that the fourth stomach had been pierced by a foreign body, and that pressure of the contents of this organ upon underlying the abdominal walls caused bulging and ultimate gangrene of the same.—*Badische Th. Mittheilungen.*

ALOPECIA IN DOMESTIC ANIMALS.

Nude horses have, in several instances, been exhibited as a curiosity. As a disease alopecia is rather rarely met, and occurs in four varieties. The first form, *alopecia congenita*, is exceptionally seen in our animals; the author has recorded a case in which the dam was bereft of the total hirsute covering, which peculiarity was transmitted to the offspring.

Hering communicates that in 1864 at a meeting of naturalists in Italy, there was presented a hairless calf, coming from healthy and even heavily-coated parents. A later investigation of the dermis showed the presence of small hair-bulbs, papilli and sebaceous glands immaturely developed; other offspring of the same parents were anatomically perfect. Rosenkranz and Nill each report two cases in bovidæ.

Alopecia areata is characterized by its occurrence in single, isolated patches upon the apparently healthy skin. This extends by enlarging its periphery, gradually increasing its circumference until it embraces the whole region in complete baldness. The latter remains permanently, as a rule, but may at some future time give place to a growth of finer texture than the original. The aetiology is, at the most, theoretically laid down, and as it now stands is unsatisfactory.

In the third form, *alopecia bityrodes*, shedding of the coat is associated with desquammation of the epithelium and itching. This loss is never compensated at any future time; it is permanent.

The last variety, *alopecia symptomatica*, seems indigenous to the domestic animals. As its name indicates it is rather symptomatic of another primary affection. The induced baldness vanishes with the original disease. Hertwig observed three cases from tetanus, morbus maculosus and overfeeding with clover, respectively. Muller describes a total loss of hair from overfeeding. Burmeister records the same as coming in the convalescent period of catarrhal fever. The therapy is to all intents and purposes useless. The author recommends for local alopecia,

℞

Spts. camph., ℥ iiss,
Tinct. aloes, ʒiiss,
Tinct. myrrhæ, ʒ ij,
Tinct. canth., ʒ ss,

M.

Sig.—To be applied bis. ind. as a spray; afterward rubbing dry.

The work of Hoffman is valuable in that it presents to view a concise collection of the literature upon the subject.—*Repert. d. Thierhlk. Bd.*

FOOD DIGESTION AS INFLUENCED BY WATER.

Marlot has for a long time busied himself with the study of food digestion as prejudiced by the previous drinking of

water. It has been with him a much vexed question whether horses should be given water before, or after feeding. He has solved the problem by experiments made upon two horses.

The first horse received four quarts of oats, and immediately afterward as much water as desired. After the lapse of a short time the same was killed, and a post-mortem held. In the stomach itself only a liter of oats were recovered floating upon much water; the other three quarts had been washed with the water into the intestines, where it existed in a state unprepared for assimilation. The digestion here is only partial, if indeed occurring at all, so that from the great bulk of the food the subject derived but a minimum amount of nutriment.

The second horse received water before being replaced in his stall, and then four quarts of oats. Precisely one quarter of an hour subsequent to the total consumption of the grain this animal was also killed, and examined in autopsy. All of the oats were yet in the stomach, and had already been acted upon to a slight extent by the digestive juices.

From these two practical demonstrations Marlot came to the conclusion that the same quantity of oats when fed to two different horses may impart an amount of nourishment differing materially, according as the animals receive water previous or subsequent to feeding.

This same practitioner instituted another experiment with the same purpose in view. He kept a close watch upon the evacuations of a horse receiving water after each meal; in this effete material he recovered numerous oats in no way affected by their passage through the digestive tract.—*Norsk. Landmansblad.*

THE OCCULT SPAVIN.

It is not infrequent that the practitioner meets with a lameness exhibiting all the characteristic symptoms of spavin, and yet neither by ocular or manual examination is he in a position to remark a deviation in the physiological contour of the bones composing the articulation of the hock. Such a grouping of symp-

toms has been attributed to the "occult" spavin, which induces no visible defect except atrophy of the muscles in the gluteal region. Such cases may spontaneously recover; that is, the atrophied muscles attain their proper size, and every trace of a prolonged lameness vanishes.

We saw a horse that had suffered nearly a year from this hidden ailment, finally recover. We advised at the start that the animal be only moderately worked, and that he be turned loose in a box-stall with abundance of straw. This case led us to seek the seat of the irritation—not in the tibio-tarsal articulation, but in the stifle-joint proper. During the time the patient was lame, there developed, in the region of the infero-internal condyle of the femur, a hard growth, in the nature of an exostosis, the size of a hen's egg.

As a consequence of this discovery, we ever afterward, in all cases of hock lameness attributed to a spavin, examined the articulation at the stifle; in most of these we recorded the presence of an enlargement at the inner side of the femur, and reached the conclusion that in the plurality of cases where the hock suffers from occult or apparent exostosis, the stifle is also involved.

As a rule, the internal condyle of the thigh bone is involved, the process later embracing the articulating surfaces. The detection of the alteration presupposes a vast deal of practice and anatomical knowledge. To aid in this, the animal is loaded by his rider or otherwise, and the two posterior limbs brought evenly together.

Manual examination determines the afflicted side to be rounder, and to possess fewer angles than its fellow of the opposite side, while fever and pain are also found. It is good practice to become accustomed to the hypertrophied condyle in chronic spavin cases. Throughout the several years that we have recorded this peculiarity, we have observed but one exception to the rule, and that was in a horse exhibiting a large spavin, but *no lameness.*

Up to the present time we have been unable to explain the process of this metastasis, and we are likewise not in a position to say that the exostoses occur in the vicinity of other joints than these enumerated.

Respecting the therapy, it must be modified so that the stifle at the inner side be covered by the epispasticum, but to a lesser extent should friction be applied to the latter locality than at the hock.

Our experience with this growth and its direct results may be summed up in the following sentences: The spavin of the equine species is a complicated affection which not alone involves the tibio-tarsal articulation, but also the femoro-tibial in lameness. The occult spavin has its location in the stifle, or femoro-tibial joint.—*Berliner Wochenschrift.*

PRIMARY TUBERCULOSIS OF THE PENIS.

From certain nodular tumors upon the penis of a bull, it had become necessary to castrate the animal. Not long after this operation the latter was slaughtered, and the lower portion of the organ, possessing the new formations, sent to the veterinary university in Dresden. Approximately, ten inches removed from the urethral opening, two tumors were located, which approached a hazel-nut in size.

These were imbedded in the constituent parenchyma of the penis; section of this revealed a cancellated interior as a foundation matrix, and in the center a crumbling mass of whitish yellow material. About three inches from the latter nodules, the organ suddenly expanded to a considerable extent, being at the prepuce six inches in circumference. Dissection revealed this increase in volume to be due to a number of hard nodules situated in among the erectile tissue of the corpus cavernosum. Also, under the skin, between it and the latter body, in the loose and elastic connective tissue of the prepuce, numerous tumors. Mucous lining of the urethra normal.

Presence of tubercle baccillus could not be proven by the Ziehl–Gabbet method; upon the thin section of the formations themselves, however, abundant colonies were detected by following the Koch-Ehrlich staining. Cases of tuberculosis of the penis in the domestic animals are met but rarely.

From the character and extent of the infection, it is highly probable that the organisms had been primarily acquired through the act of copulation; and, secondarily, by some imperfection in the epithelium forming the cutis.—*Deutsche Ztsch. f. Thiermed.*

SCROTAL HERNIA IN A GELDING.

In veterinary literature the weight of opinion, as given by the greatest number of writers, is that scrotal hernia occurs only in the stallion, and that when found in the gelding it is immediately subsequent to castration. After this operation the inguinal canal has not had sufficient opportunity to become effaced.

It may be, therefore, that the communication of a case, occuring contrary to all known history, may be of general interest.

An eight-year old gelding, of good proportions and strongly made, was harnessed to a plough in the fall of the year, and used in a field in which numerous stumps and roots of fallen trees obstructed the way; over one of these latter the animal fell, but quickly thereafter arose. In attempting to urge the horse he moved only slowly, and when halted evinced so great a recklessness that it was advisable to put him in the stable.

Arriving there the animal at once lay upon his spine and maintained this position for some time; after this he suddenly regained his feet and seemed as sound as before the accident.

Several hours later the same symptoms became evident; the animal again becoming unquiet and assuming a dorsal position, remained so until free from all pain. At each time these periodic pains occured there could be noticed a swelling some ten inches in diameter, which protruded from the abdomen in the inguinal region and which disappeared when the patient reclined. About six weeks after the first attack the horse was led to me late one evening with the history that he was subject to attacks of colic at irregular intervals, which the owner feared would cause his sudden death.

The next morning we were able to confirm the facts as related the night before, even to the smallest detail.

Before proceeding with an operation we had given the patient

a strong purgative and removed all feed. The day following the horse was hobbled and thrown and placed upon his back, the lateral bipeds being bound. Examination of the locality showed the inguinal ring to be of considerable diameter, easily permitting the passage of a hen's egg. Upon the affected side—the right—an incision one foot in length was made, which traversed the enlargement parallel to the mesial line; the skin was dissected right and left, exposing a considerable area and forming two immense pockets.

The lips of the wound, at the edges, were brought in apposition by tape suture, except at the posterior commissure, which aperture was allowed to remain open. Through the latter balls of oakum were introduced until somewhat more than a pound had been used. The opening was not sutured, thus holding the contents securely within.

Being allowed to stand, the animal was in a few minutes taken to the stable, and the posterior limbs put upon an elevation some two feet in height, and was kept under constant surveillance for seventy-two hours. At the end of this time the rear stitches were severed and the cyst cleansed and refilled. After the expiration of the sixth day this procedure was again resorted to; some of the sutures being also renewed.

From this time on the oakum was changed every two days, the cavity being more loosely filled each time. Healing of the wound proceeded kindly and rapidly; at the end of the fourth week the patient was discharged.—*Ber. Thier. Wochen.*

NEW MEMBERS ELECTED

TO THE UNITED STATES VETERINARY MEDICAL ASSOCIATION AT THE MEETING IN BOSTON.

HONORARY MEMBERSHIP.—Prof. A. Chauveau, Lyons, France, Director-General of the Veterinary Schools of France. Anatomist-Physiologist—Work on Contagious Diseases, etc.; proposed by R. S. Huidekoper, A. Liautard. Isaiah Michener,

Carversville, Pa., born Jan. 25, 1812, 60 years; in active practice in eastern Pennsylvania and the border counties of New Jersey; was one of the earliest names mentioned in connection with the original Veterinary College in Philadelphia; attended "Dadd's Clinics" in Boston; honorary member of the Pennsylvania State Veterinary Medical Association; one of the first members of the profession to recognize and treat the disease which is commonly termed "Cerebro Spinal Meningitis"; also to bring it into public notice through his accounts in public periodicals; proposed by Thomas B. Rayner, W. H. Hoskins.

ACTIVE MEMBERSHIP.—Charles F. Douglass, D.V.S., American Veterinary College, Kingston, Jamaica; vouchers, A. Liautard, A. J. Coates. John W. Gadsden, M.R.C.V.S., London, England, 128 N. 10th street, Philadelphia, Pa.; vouchers, J. F. Winchester, R. S. Huidekoper. William Jakeman, Montreal Veterinary College, Halifax, N. S.; vouchers, J. M. Parker, L. H. Howard. H. D. Lambert, D.V.S., American Veterinary College, Salem, Mass.; vouchers, F. H. Osgood, L. H. Howard. William Lord, M.D.V., Harvard Veterinary Department, Portland, Me.; voucher, F. W. Huntington. Edward J. McLeod, D.V.S., Chicago Veterinary College, 1149 Niagara street, Buffalo, N. Y.; vouchers, N. P. Hinkley, John Wende. Thomas G. Sherwood, M.R.C.V.S., London, 854 Seventh avenue, New York City; voucher, R. S. Huidekoper. F. C. Wilkinson, V.S., Ontario, Claremont, N. H.; voucher, W. L. Baker. Benjamin Wende, V.S., Ontario, Millgrove, Erie county, New York; vouchers, N. P. Hinkley, John Wende. D. E. Smith, V.S., New York College, Great Neck, Queens county, New York; vouchers, R. S. Huidekoper, R. A. McLean.

RE-INSTATED.—E. C. Beckett, Harvard Veterinary College, 547 Albany street, Boston, Mass. Madison Bunker, D.V.S., American Veterinary College, Newton, Mass.

HELD OVER.—H. F. Doris, D.V.S., Ameriean Veterinary College, 3 Seventh street, Pittsburg, Pa.; voucher, W. H. Hoskins. J. D. Robinson, D.V.S., Chicago Veterinary College, 22 C street, Washington, D. C.; vouchers, A. H. Baker, E. S. Walmer. C. H. Pierce, V.S., Ontario, Minneapolis, Minn.; vouchers,

Tait Butler, C. C. Lyford. H. W. Hawley, D.V.S., Chicago, Chicago, Ill.; vouchers, A. H. Baker, S. S. Baker. A. D. McKenney, V.S., Ontario, Ann Arbor, Mich.; voucher, E. A. A. Grange. F. A. Duclos, V.S., Montreal Veterinary College, Laval University, Holyoke, Mass.

UNFAVORABLY CONSIDERED.—John Doris, Jr., D.V.S., Ohio Veterinary College, 152 Center street, Pittsburg, Pa. William H. Valway, V.S., New York College, 2698 Broadway, Cleveland, Ohio; voucher, William H. Howe.

MEMBERS RESIGNED.—John T. Claris, 627 Clinton street. Buffalo, N. Y.

SOCIETY MEETINGS.

KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held in Philadelphia, Oct. 11th, 1892, President Dr. R. G. Webster in the chair.

The minutes of the last meeting were read and approved.

Dr. H. P. Eves, of Wilmington, Del., a delegate to the United States Veterinary Medical Association, reported having attended the meeting held at Boston and was very much edified with the learning displayed and highly pleased with the entertainment provided by the veterinarians of Boston. He also reported having attended the Pennsylvania State Veterinary Medical Association as a delegate from the Keystone, and was surprised at the number in attendance, being greater than the United States Association—that is, the attendance of the State Association was much greater than he expected to see, and the United States much less than anticipated.

The postponed election for Trustees resulted as follows: Dr. W. Horace Hoskins, Dr. H. P. Eves, Dr. Charles Lintz, Dr. A. T. Sellers, and Dr. James B. Rayner.

The application for membership of Dr. T. Earl Budd, Woodbury, N. J., and Dr. Warren T. Edwards, Downingtown, Pa., were received and referred to the Board of Trustees.

Dr. W. H. Hoskins, essayist, read the following paper:

Mr. President and Gentlemen:

I come before you to-night with a double apology; the first one is, that I should be called so soon again after leaving the chair as your presiding officer to address you on the topics of the day; and in the second place, that these remarks should come to you in such an incomplete manner. For this I can only say that but three days' notice was given me in which to prepare a brief review of the questions that interest you in the veterinary world; and if I can but win your attention for a few minutes I will feel gratified in so doing and rejoice that our meeting has not been fruitless of some good. My reasons for the acceptance of this duty were wholly those of a sense of responsibility as a member in endeavoring to have your new officers successfully carry on the work of this Association during the coming winter, and in so doing to fulfill whatever task or duty that you may allot to me as a member; and in so far as it can be accomplished I shall consider it my duty to comply with your requests.

I have chosen the above outline of my subject because at the beginning of another year's work it seems to be such a one as may furnish us with thought and work during this coming winter. The many sudden and broad changes that have characterized the doings in the world of veterinary science during the past year seem to demand at our hands stronger cousideration, stronger work. It affords us an incentive that will bring to us at the end of our work a rich return, when we have properly considered and disposed of the great questions of importance that are knocking at our doors for aid in their final disposition. It also points strongly to the need of stronger veterinary organizations. The national one must soon tend in directions and lines that will lift it entirely from the consideration of those topics which are more or less local in character.

It is a strong incentive to State organizations to become more aggressive and to be better informed upon those topics which are of grave interest to their perpetuation and success as a profession and a science. It commends the development of stronger local

organizations in large cities and towns around which center thickly populated counties and districts. Wherever sufficient members of the profession may be drawn together to form even a small organization affords part of the work that is before us to accomplish. It demands from us as one of the oldest local organizations to take the most aggressive part in many lines of new work, and to dispose of them in such a manner as will tend to enhance the value and good of our State organizations, and make more complete and broader the organization that shall represent us in national matters.

I therefore appeal to you, fellow-members, to not be unmindful of the duties that may fall to your lot during this coming year. They will be many, and they will fall thick and fast, and they must ever find you ready to fulfill your part, and thus complete the duty which you assumed when you entered the profession of your choice. None of us can afford to take a selfish view of the calling which we have adopted. It must not be considered wholly in the light of a means to secure a rich livelihood or of money-making; but we have entered upon a profession that needs to-day stronger men than ever, who are willing to render some services to make veterinary science what it is destined to be in America. The breadth of our calling is so unlimited that the time must soon come when we must act as a sanitarian in the broad sense of the word, as a police in the protection of our people from diseases which our animals and men are alike subject to, guard the great food sources—the supply of meat and milk; as well as to execute the regulations that shall insure to our people a complete safeguard from the dangers that are therein threatened. The time is not far distant when all this and much more will fall to your lot, and unless the preparatory work is done now and done faithfully for those who are to follow after you in your calling, the science and profession which you promised to uphold, will find itself ill-prepared to perform these duties and work; and upon you and I must fall the responsibility in great measure of any failure that may ensue in this direction. For these reasons I feel that we have no right to simply indulge in all the good things that may follow in the course of our work;

and to be forgetful and unmindful of the strong plans which our foundation must support in the future.

With ever increasing fidelity, associations must in the future take more recognition of the movements in the various veterinary colleges of our country. We must become stronger supporters of those schools whose intentions are to increase the requirements for admission; to broaden and strengthen their curriculums; to enlarge their facilities for instruction; to raise the standard of their requirements for graduation; and to encourage them with the support they need from us, that we should give, in order that they may feel that their labors are not unrecognized or unappreciated. We must alike be severe critics of those whose efforts are for the creation of immature schools, the offering of a lower grade of inducements for students to enter, and whose incentive in their work would seem from the outcome of their efforts to be that of money-making; and we must soon draw a line on these classes of new members of the profession in all our organizations.

The rapid multiplication of veterinary schools during the past year I very much fear bodes no good to our profession. Many of them I know are wholly unprepared to fulfill the requirements of completing such an education as is demanded by the public to-day, in many sections of our country, to properly perform the duties that may fall to their lot as veterinarians. Within the past year new schools have originated at Detroit, Michigan; Cincinnati, Ohio; Des Moines, Iowa; Kansas City, Mo.; Washington, D. C., while the older schools of Montreal, Toronto, American and New York, of N. Y., Veterinary Department of Harvard, University of Pennsylvania, Veterinary Department of Iowa Agricultural College, Chicago and Baltimore, with the various veterinary chairs in the Agricultural Schools of New York, Virginia, Ohio, Mississippi, Indiana, and some other States are still in the field. The school at Minneapolis for the present has ceased to perform active duties. I am safe in saying that all these schools have not originated from any demand by the profession or from the needs of any one section of our country. I do not deny the fact that there is room for them all; but I do

claim and demand that they must broaden and strengthen their course of study and requirements to keep pace with the growth and advancement of our profession in this direction. I am very sure they are not all qualified to carry on such work of so great responsibilities, and the sooner that some of them close their doors the better for the profession in which we are concerned. I speak now from the many unwilling admissions of many of those who are graduates of said schools and are willing to approve all that I say when they consider their Alma Maters were created as money-making schemes rather than for the broadening and strengthening of the veterinary profession.

If our associations, national, state, local, continue to admit these graduates simply upon their possession of a diploma, we simply become forgetful of the duties that are ours to perform in providing and planning for the future profession of America. Such inducements of two years (of less than six months) graduating young men as minors, and cheap fees, and many other equally unfavorable inducements, are not such as to tend, in my estimation to enhance the value of our profession in this country.

Our recognition or support may not alter the course of a single school in our country; neither, perhaps, will our condemnation or severe criticism of immature schools wipe one of them out of existence; but I do believe it will retard their multiplication. And if the veterinary associations of our entire country are a unit upon the question of a higher and more advanced education than is now given by many of our veterinary schools and colleges, I am very sure it will have a good influence in encouraging them to broaden their curriculums and to attain the minimum standard which we may create. If but this should be accomplished it will place us, as organized bodies of the profession, in the proper light before the public who are to measure our usefulness by the influence and by the kind and character of work which we perform; and the public will not be slow to recognize any move upon the part of an organized body of our members to advance and strengthen the usefulness of our calling. In the various channels of work which we are called to perform they will not be slow to recognize our own just recognition of the need of stronger and

better men in the future than have been produced in the past by the various veterinary colleges of our country.

I think it is incumbent upon the members of this Association to-night to take recognition of the action of the United States Veterinary Medical Association in the adoption of the amendment which was so unanimously carried at their Convention in September at Boston, and to hail with just pleasure and satisfaction this wise step on their part.

Amendment. "ARTICLE 1. Any applicant for membership shall submit his name upon one of the Association's application blanks, duly vouched for by one or more members of the Association, or by the resident State Secretary of his respective State. He shall be a graduate of a regularly organized and recognized veterinary school, which shall have a curriculum of at least three years, of at least six months each, specially devoted to the study of veterinary science, and whose corps of instructors shall contain at least four veterinarians. If of a medical school a similar curriculum as to time shall prevail." This alteration not to apply to matriculants of the year 1892. It shall not be retroactive nor apply to applicants who were college matriculants prior to its passage.

I think we should also make recognition of the fact that the American Veterinary College of New York has made the announcement that on and after 1893 her course shall be an obligatory one of three years. I do trust that she may be only one of the various two-year schools that will take this advanced step during the present year.

I think it is equally incumbent upon us that we should place upon record our feelings of disappointment and condemnation of the establishment of another two-year school at Washington, D. C. I consider this movement to be one of the most dangerous and unexpected in the annals of veterinary science in this country. We certainly had a right to expect not a similar curriculum, but a broader and stronger one from such a source, than exists to-day in any of the veterinary colleges of this country. It comes at a time when it produces among the members of the profession in this country one of the sorest disappointments that

we have ever had to bear. I still hope that the feelings of the profession of our country may be so strongly placed before those who are the creators of this new movement that they shall modify their announcement, and place it in conformity with the most advanced veterinary colleges of our country. There can be no doubt but that with the strength of means and facilities that they may secure in Washington it could be made the best and strongest school in our entire country; and to none would result greater benefits than to those who shoulder its responsibilities if they would rise up to the demands and requirements of the day.

Briefly I desire to call your attention to the duty which is now imposed upon us as practitioners of veterinary medicine, to individually take up and experiment with tuberculin for tuberculosis in cattle, and mallein for glanders in horses. The work done by foreign investigators, and the more recent work of experimentation done in our own country by the "Tuberculosis Commission of the University of Pennsylvania," and the results of the experiments by Dr. Leonard Pearson, and their comparison with the results obtained in diagnosing tuberculosis by physical methods makes it incumbent upon us to take up this work and so thoroughly test its value that we may intelligently determine whether we can rely upon this as a complete and almost unfailing diagnostic agent for the detection of tuberculosis. I can but think that certainly the results already obtained by the experimenters warrant each one of us, and almost demand that we shall give it personal tests as to its value, and bring into this Association the results of our work, that it may be placed upon record and used for the benefit and promotion of our calling.

The experiments in the use of mallein as a diagnostic agent for the detection of glanders, by Drs. Pearson, Kilborne and De-Schweinitz, bring to us such evidence of its value in this very important direction that we cannot longer ignore the use of it in determining those obscure cases which we oft-times meet with, and of which history has recorded many where they have done wonderful damage, without any positive evidence, in so far as physical signs were concerned, that would warrant the destruction of the animal. Any one of us during the coming six or eight months

will have an opportunity of testing its value. The kind offer of the Bureau of Animal Industry to furnish us with material necessary to accomplish these experiments should not go unnoticed or ignored.

The work of our friend and fellow-member of this Association (Dr. S. E. Weber), in his extensive investigations in regard to the diseases of rodents, and the light he has shed upon the question of tuberculosis and many other important diseases of men and these lower animals, affords us thought for consideration, and may be the means of ultimately determining the causation and field of the development of this important disease, whose history and pathology have been wrapped in so much obscurity. It is to be hoped that he will continue his original work in this field, and that this shall be from time to time brought out for our entertainment and enlightenment.

The recent investigations and conclusive proofs of the infectious character of tetanus, that so long has defied the skill of the entire profession throughout the world, should not go unnoticed by the members of this Association. The possibility of giving immunity to animals by the introduction of certain remedies, and likewise immunity to be given by the transfusion of blood from the immuned animals, offers to us a haven of security that promises much for our advancement and our success in the future work in this direction.

The agitation this coming winter of a bill for the more thorough inspection of meat and milk for the cities in this State, should not find us unprepared to aid and support it with our united strength if it be so drawn that it meets with our approval as a law destined to be of great benefit to our people and indirectly to our profession. The need of such a law is unquestioned, and the only point for us to decide is in the character of a law which we may secure, and to avoid the dangers of it becoming semi-political in character, and by these means robbed of the great benefits which it promises to confer upon our people.

We should not be unmindful of the wonderful work achieved by the Bureau of Animal Industry in stamping from our country that exotic and frightfully extensive plague known as "Conta-

gious Pleuro-Pneumonia." The achievement of our National Government through its Bureau of Animal Industry, in securing co-operation by State authority in dealing with this disease from a National and single standpoint at such a small expense, in so far as the work itself was concerned. Success for the value of the veterinary profession, when it is clothed with proper power, in doing for this country what has never been accomplished by any other nation on the earth where this disease has ever secured a foothold. This part of our National Government, this Bureau of broad-gauged leaders, should receive at the hands of our veterinary association in this country a most cordial vote of appreciation and praise. The remarkable results they have achieved in stamping out this bovine scourge that has long embarrassed and hindered and restricted our commercial advantages throughout the whole world, in the commercial supremacy that we should ever have held as producers and venders of live-stock.

Another point to which I desire to call your attention that demands our recognition as a profession. I refer to the article in the October number of the *Druggist's Circular* in which a letter was published that questioned whether veterinary graduates or non-graduates could be considered as graduates of medicine in the eyes of the law, and as to whether druggists and pharmacists should not place upon all their prescriptions which contained any recognized poisons, a poison label, that may be the means of alarming our employer, and end in the loss perhaps of a client. We certainly should demand of all druggists and pharmacists that same respect for our prescriptions, as is accorded members of the medical profession; and should exact from them no discretion in such a matter, but should simply follow the directions as indicated by our prescriptions. If in the event of an error on our part in writing the same, we should receive the same courtesy as our sister profession, and the prescription returned to our office for information or correction. The poison label, which might be justly placed by this construction of the act, would call for very many uses of said label that would very often end in serious results, by the fears which would be created, and the failure to administer the prescriptions as directed.

At a recent meeting of the United States Veterinary Medical Association at Boston the failure to secure legislation looking to the proper recognition of the veterinarians in the United States Army was reported by the Chairman on the Committee of Army Legislation. He further stated that one of the chief reasons for this condition of affairs was the result of the lack of unity upon the part of the profession throughout the country, as to the needs or the united demand for the same. The lack of harmony, indifference and consideration of selfish interests had resulted in so many diverse views, reaching the committee in whose charge this bill was, that they felt that it was a difficult matter to decide what was wanted, and where the profession as a body stood on this important question. When we consider that we are living under the only civilized government which does not accord the veterinary profession any rank in our army, it is not hard to see what an unfortunate position we hold in the eyes of all the other civilized goverments of the world. Only repeated failures have been the outcome of the hard work done by the committees in this direction. It still is of so much importance that it should not be given up without continual agitation, and keeping of the question prominently before those at whose hands we can only expect help. We may ultimately find a fitting opportunity to secure this much needed legislation. The recommendation of that committee should not go unheeded during the coming year by the various veterinary organizations throughout this country, but starting from them as a voice of the profession in the various States, counties and cities which they represent, they should pass such resolutions commending the need of this act, and these to be presented by the Army Legislation Committee, would, no doubt, be a strong factor in aiding the accomplishment of this work. I trust that this Association will not fail to recognize their duty in this direction.

I might go on, fellow-members, calling your attention to many other points of equal importance and value to us, but inasmuch as I have already encroached very largely upon your time I will leave for you such other points of equal interest as I know are important, and demanding your consideration and recognition in your daily duties.

I thank you for the attention which you have given, and trust that these ill-prepared remarks may receive at your hands a fair consideration, owing to the short time I have had in preparing them.

A vote of thanks was tendered Dr. Hoskins for his valuable paper. The report of the Board of Trustees upon the application for membership was favorable. The report was received, and the applicants elected to membership. The Chair appointed as a committee to draw up resolutions expressive of the sense of this Association upon the short-term colleges in general, and the one in Washington, D. C., in particular, Drs. W. Horace Hoskins, H. P. Eves, C. Lintz, A. T. Sellers and James B. Rayner to report at next meeting.

On motion, adjourned. W. S. KOOKER, *Sec'y.*

PHILADELPHIA VETERINARY MEDICAL SOCIETY.

The Philadelphia Veterinary Medical Society held its regular meeting at the College of Physicians, Thirteenth and Locust Streets, Philadelphia, September 27th, 1892. President S. J. J. Harger in the chair.

Members present: Drs. Ridge, Maher, Bunting, Conard, Williams, Eves, Magill, Pearson and Conrow. Visitors: Drs. John Marshall, T. Earl Budd and Herman Wellner. New members elected: Francis S. Allen, M.D., V.S., T. Earl Budd, D.V.S., Horace P. Keeley, V.M.D., and W. A. Wilfrid Turnbull, V.M.D.

Dr. Leonard Pearson read paper upon "Anthrax," discussed by Drs. Eves and Williams.

Drs. Ridge and Conard cited cases of stoppage of œsophagus in cows. Dr. Magill cited a case in a horse.

Dr. Conard cited cases of contagious conjunctivitis and keratitis in cattle. Treatment: Two and one-half per cent. creolin sol.; bandage, atropia and boracic acid sol.

Dr. T. Earl Budd reported a case of dystokia in a bitch due to fractured pelvis; Dr. S. J. J. Harger performed section.

Dr. Ridge moved to suspend by-laws. Carried.

Dr. Conard offered resolutions protesting against the starting of a two-year veterinary school at Washington, D. C., by employees of Bureau of Animal Industry. Discussed by Drs. Marshall, Ridge, Eves, Williams, Pearson, Budd and Harger. Moved by Dr. Maher to adopt as read, and to send copies to Bureau of Animal Industry, Secretary of Agriculture, and secretaries of veterinary societies. Seconded by Dr. Eves. Carried.

Adjourned to meet October 25th.

A. E. CONROW, *Secy.*

The Philadelphia Veterinary Medical Society held its regular meeting at the College of Physicians, Thirteenth and Locust Streets, Philadelphia, October 25th, 1892. President S. J. J. Harger in the chair.

Members present: Drs. Ridge, Schreiber, Landis, Conard, Entrekin, Rogers, Zuill, Keely, Holdsworth, Tag and Conrow. Visitors: Dr. J. W. Adams.

Minutes of last meeting read and approved.

New member elected: J. W. Adams, V.M.D.

Communications read from Drs. Cooper Curtice, of Moravia, N. Y., and M. Stalker, of Ames, Iowa, in answer to resolutions adopted at last meeting. On motion communications ordered filed, and copies forwarded to *Journal* and REVIEW for publication.

Dr. Zuill moved that Dr. H. D. Fennimore's communication be received, and his name be transferred from active to corresponding membership. Carried.

Our essayist, Dr. Eves, being absent, Dr. Conard reported his cases of contagious keratatis as having done well.

Dr. Landis cited case of abscess of rectum with chronic peritonitis and pleurisy.

Dr. Conard cited case of tumor in mesentary of small intestine large as Yankee bucket.

Dr. Rogers reported a case, he thinks, of contagious pleuropneumonia, discussed by Drs. Zuill, Schrieber, Ridge and Landis.

Dr. Zuill censured officers for not having a paper read at this

meeting, and insists that all cases should be presented in writing.

Adjourned until November 22d, 1892.

A. E. CONROW, *Sec'y.*

MAINE STATE VETERINARY MEDICAL ASSOCIATION.

The initial meeting of the Maine Veterinary Medical Association was held at the Prebble House, Portland, October 11th, 1892.

Members present: Drs. Geo. H. Bailey, Portland; F. W. Huntington, Woodfords; W. S. Lord, Portland; A. Joly, Waterville; C. F. Dwinal, Mechanics Falls; H. H. Choate, Lewiston.

A letter was read from Dr. Russell, of the Maine State Agricultural College, expressing himself as being very much in favor of this movement, and regretting his inability to be present. Dr. Choate was nominated temporary chairman; Dr. Lord, Secretary.

Constitution and by-laws were adopted, and the following officers elected for the ensuing year: President, Dr. Geo. H. Bailey, D.V.S.; Vice-President, F. W. Huntington, D.V.S.; Secretary, H. H. Choate, D.V.S.; Treasurer, A. Joly, V.S.

The President appointed the following committees: Committee on By-Laws, Drs. Lord, Joly and Choate; Committee on Credentials, Drs. Huntington, Dwinal and Joly.

It was voted to hold the next meeting at the Dewitt House, Lewiston, January 10th, 1893.

H. H. CHOATE, D.V.S., *Sec'y.*

ILLINOIS AND IOWA STATE VETERINARY MEDICAL ASSOCIATIONS.

From reports received at very short notice from our issue of last month, we are able to announce only in this REVIEW the meetings of these two associations which have taken place—the former on the 16th and 17th of November, and the latter on the 10th and 11th of November.

We hope that both meetings were successful, the attendance large, and that their secretaries will do us the favor to send us minutes of the transactions for our readers.

CALIFORNIA STATE VETERINARY MEDICAL ASSOCIATION.

A meeting of the California State Veterinary Medical Association was held at the Baldwin Hotel, San Francisco, September 14th, 1892.

The meeting was called to order by the Vice-President, Dr. Wm. F. Egan, of San Francisco.

Upon roll call the following gentlemen responded: Drs. Egan, Witherspoon, Pierce, Masoero, Spencer, Sr., Spencer, Jr., Burns, Orvis, Wadams, Powers, Neef and Archibald. Visitors, Drs. H. and T. Carpenter.

Letters of regret were read from absent members.

Dr. Pierce, of Oakland, then read a very practical and interesting paper on "Fractures." The essayist described numerous cases which had come under his notice; he also described his methods of treating same. A lively and animated discussion followed, in which all the members present joined.

The Committee on Legislation were then called upon for their report. The Secretary read the report and also read the views of the southern members on the subject.

Drs. H. and T. Carpenter were asked to give their opinion. Thereupon Dr. T. Carpenter rose and made a very exhaustive speech, reviewing the subject both from a professional and non-professional standpoint. After a long discussion, it was finally decided that a meeting of the veterinary practitioners of the State of California, irrespective of Association, be called, and the subject matter of legislation be laid before them. Is was also decided that the Association adjourn for a short time in order that some plans could be made to bring about such a meeting. A motion to adjourn was carried.

The meeting being again called to order, the following named gentleman were elected members. Dr. J. C. C. Price, Los Angeles; Dr. R. H. Powers, Chicago; Dr. W. Skaife, San Francisco.

The Secretary then proposed the names of the following

gentlemen: Dr. J. Graham, Fresno; Dr. W. Carmichael, Hanford; Dr. Rowland Lord, San Jose.

The Secretary then spoke at some length on the subject of having as many of the members as possible join the United States Veterinary Medical Association, and having the California State Veterinary Medical Association well represented at the meeting of the above Association in Chicago next year. He endeavored to portray the benefits which the veterinary profession of the United States would receive from this organization. He stated that it was his opinion that the veterinary practitioner would receive more benefits from this organization than from his local Association.

The Chair then declared nominations of officers for the ensuing year in order, and the following were elected: President, Dr. Wm. F. Egan; Vice-Presidents, Drs. Spencer, Jr., and Whittlesey; Secretary, Dr. R. A. Archibald; Treasurer, Dr. C. B. Orvis. Directors.—Drs. Spencer, Sr., Burns and Wadams. Board of Examiners.—Drs. Maclay, Orvis, Masoero, Rowland and Morrison.

There being no further business, meeting adjourned to meet in Los Angeles, December 14th, 1892,

R. C. ARCHIBALD, D.V.S., *Sec'y.*

OBITUARY.

EDWARD TAYLOR CAMPBELL, D.V.S.

It will be sad news to the graduates of the American Veterinary College who knew Dr. E. T. Campbell to hear of his death, which took place on the 24th of October, at White Plains. Dr. Campbell had been sick for a long time, even suffering with phthisis when at college. He had been obliged to give up practice for some time, and was at the time of his death living with his father. He had, in the short time that he practiced, succeeded in making a great many friends. He graduated with the class of 1889.

CORRESPONDENCE.

Editor Review:

On page 124 of REVIEW, the *New Era* gives the result of the analysis of Kendall's spavin cure.

Now you will find this analysis, or nearly the same, in the *Druggist's Circular* of April, 1891, as follows:

℞	Turpentine spt.,	℥ i,
	Alcohol,	℥ ii,
	Camphor,	℥ ss,
	Iodine,	grs. xxv,
	Oil rosemary,	℥ i,
	Petroleum (heavy)	℥ ss.

Also the same issue gives analysis of Gombault's caustic Balsam, or a preparation similar to it:

℞	Croton oil,	℥ iv,
	Cottonseed oil,	℥ ii,
	Oil camphor,	℥ i,
	Oil turpentine,	℥ ii,
	Oil thyme,	℥ ss,
	Kerosene,	℥ iv,
	Acid sulphuric	M. xx.

Mix croton oil and cottonseed oil, then add sulphuric acid gradually, stirring constantly; then add the remainder.

Yours, etc.,

W. H. RIDGE.

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